

Before you begin

 3 minute read  page test

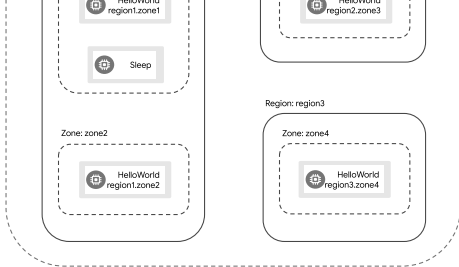
Before you begin the locality load balancing tasks, you must first install Istio on multiple clusters. The clusters must span three regions, containing four availability zones. The number of clusters required may vary based on the capabilities offered by your cloud provider.

For simplicity, we will assume that there is only a single primary cluster in the mesh.

This simplifies the process of configuring the control plane, since changes only need to be applied to one cluster.

We will deploy several instances of the `HelloWorld` application as follows:





Setup for locality load balancing
tasks

Environment Variables

This guide assumes that all clusters will be accessed through contexts in the default `Kubernetes` configuration file. The following environment variables will be used for the various contexts:

Variable	Description
CTX_PRIMARY	The context used for applying configuration to the primary cluster.
CTX_R1_Z1	The context used to interact with pods in <code>region1.zone1</code> .
CTX_R1_Z	The context used to interact with pods

2	<code>in region1.zone2.</code>
CTX_R2_Z 3	The context used to interact with pods <code>in region2.zone3.</code>
CTX_R3_Z 4	The context used to interact with pods <code>in region3.zone4.</code>

Create the `sample` namespace

To begin, generate yaml for the `sample` namespace

with automatic sidecar injection enabled:

```
$ cat <<EOF > sample.yaml
apiVersion: v1
kind: Namespace
metadata:
  name: sample
  labels:
    istio-injection: enabled
EOF
```

Add the `sample` namespace to each cluster:

```
$ for CTX in "$CTX_PRIMARY" "$CTX_R1_Z1" "$CTX_R1_Z2" "$CTX_R2_Z3" "$CTX_R3_Z4"; \
do \
    kubectl --context="$CTX" apply -f sample.yaml; \
done
```

Deploy HelloWorld

Generate the `HelloWorld` YAML for each locality, using the locality as the version string:

```
$ for LOC in "region1.zone1" "region1.zone2" "region2.zone3" "region3.zone4"; \
do \
    ./@samples/helloworld/gen-helloworld.sh@ \
    --version "$LOC" > "helloworld-${LOC}.yaml"; \
done
```

Apply the `HelloWorld` YAML to the appropriate cluster for each locality:

```
$ kubectl apply --context="${CTX_R1_Z1}" -n sample \
-f helloworld-region1.zone1.yaml
```

```
$ kubectl apply --context="${CTX_R1_Z2}" -n sample \
-f helloworld-region1.zone2.yaml
```



```
$ kubectl apply --context="${CTX_R2_Z3}" -n sample \
-f helloworld-region2.zone3.yaml
```

```
$ kubectl apply --context="${CTX_R3_Z4}" -n sample \
-f helloworld-region3.zone4.yaml
```

Deploy Sleep

Deploy the `sleep` application to `region1 zone1`:

```
$ kubectl apply --context="${CTX_R1_Z1}" \
-f @samples/sleep/sleep.yaml@ -n sample
```

Wait for HelloWorld pods

Wait until the HelloWorld pods in each zone are Running:

```
$ kubectl get pod --context="${CTX_R1_Z1}" -n sample -l app="hello-world" \
  -l version="region1.zone1"
```

NAME	READY	STATUS	RES
helloworld-region1.zone1-86f77cd7b-cpxhv	2/2	Running	0
30s			

```
$ kubectl get pod --context="${CTX_R1_Z2}" -n sample -l app="helloworld" \
  -l version="region1.zone2"
```

NAME	READY	STATUS	RES
TARTS AGE			
helloworld-region1.zone2-86f77cd7b-cpxhv	2/2	Running	0
30s			

```
$ kubectl get pod --context="${CTX_R2_Z3}" -n sample -l app="helloworld" \
  -l version="region2.zone3"
```

NAME	READY	STATUS	RES
TARTS AGE			
helloworld-region2.zone3-86f77cd7b-cpxhv	2/2	Running	0
30s			

```
$ kubectl get pod --context="${CTX_R3_Z4}" -n sample -l app="helloworld" \
  -l version="region3.zone4"
```


NAME	READY	STATUS	RES
TARTS AGE			
helloworld-region3.zone4-86f77cd7b-cpxhv	2/2	Running	0
30s			

Congratulations! You successfully configured the system and are now ready to begin the locality load balancing tasks!

Next steps

You can now configure one of the following load balancing options:

- Locality failover
- Locality weighted distribution



Only one of the load balancing options should be configured, as they are mutually exclusive. Attempting to configure both may lead to unexpected behavior.